CMPT 733
Introduction to AWS

Steven Bergner

sbergner@sfu.ca

30 March 2020

Amazon

From Wikipedia 2006

Article Talk Read

Amazon.com

From Wikipedia, the free encyclopedia

This is an old revision of this page 05:10, 20 March 2006 (→Customer permanent link to this revision, wh revision.

(diff) ← Previous revision | Latest revisi

Amazon.com
(NASDAQ: AMZN) is an American electronic commerce company based in Seattle, Washington. It was one of the

From Wikipedia 2020

Amazon (company)

From Wikipedia, the free encyclopedia

Amazon.com, Inc.[7] (/ˈæməzɒn/), is an American multinational technology company based in Seattle, with 750,000 employees.[8] It focuses on e-commerce, cloud computing, digital streaming, and artificial intelligence. It is considered one of the Big Four tech companies, along with Google, Apple, and Microsoft.[9][10][11] It has been referred to as "one of the most influential economic and cultural forces in the world."[12]

What is Cloud Computing?

The buzz word before “Big Data”

- Larry Ellison’s response in 2009 (https://youtu.be/UOEFXaWHppE?t=7s)
- Berkeley RADLab’s paper in 2009 (https://www.youtube.com/watch?v=IJCxqoh5ep4)

A technical point of view

- Internet-based computing (i.e., computers attached to network)

A business-model point of view

- Pay-as-you-go (i.e., rental, tenancy)

Three Types of Cloud Computing

CourSys

Database

Servers

- Application + Cloud = SaaS (Software as a service)
- Platform + Cloud = PaaS (Platform as a service)
- Infrastructure + Cloud = IaaS (Infrastructure as a service)

How does AWS fit into the picture?

IaaS

- EC2, S3, …
- Highlight: EC2 and S3 are two of the earliest products in AWS

PaaS

- Aurora, Redshift, …
- Highlight: Aurora and Redshift are among the fastest growing products in AWS

SaaS

- WorkDocs, WorkMail
- Hightlight: May not be the main focus of AWS

Why did AWS succeed?

Starting from IaaS (i.e., S3 and EC2) is the key

- Although there are many SaaS and PaaS companies before AWS, mostly people still wanted to have full control of computing resources

10-100 times less expensive than alternatives (2006)

- Apply the existing *unused* resources (that are for Amazon.com) to cloud computing

The speed of provisioning is really fast

- Similar to “1-click buy”

Google and Microsoft

Google Compute Platform (GCP)

- Compute Engine is analog to AWS EC2
- Highlights:
  - Large data service: Big Query (static) and Big Table (dynamic data)
  - Mobile app development: Firebase

Microsoft Azure

- Highlights: Data Factory (streamlining ETL)

Trend: Increasing investment in AI (deployment) and data pipelines

More pointers

Digital Ocean (cloud provider)

- Developer focus
- Kubernetes cluster, VMs

MyBinder.org (service)

- Run Jupyter notebooks off of Github repo
- Alternative to Google Colab

Continuous Integration (CI)

- Native in Gitlab
- Travis-CI provides free CI for public repos

Summary

Big Picture

- Cloud Computing
- SaaS, PaaS, and IaaS

AWS, GCP, Azure

- Putting Amazon, Google, and Microsoft into the big picture
- Why did AWS succeed?

Sources

- Jiannan Wang’s slides CMPT 733, 2019